



An Energy Efficiency Workshop & Exposition

Palm Springs, California

## *Appropriations and Private Financing: A Look Back*

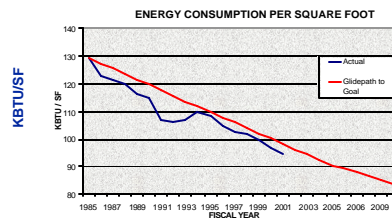
Bruce Murphy  
Army Energy Program



## *Energy Goals & Current Status*

*Army has a Successful Energy Program*

- **ARMY GOAL:** Reduce facility energy usage by 35% by 2010 from 1985 baseline
- Thru FY 01 - Army at 27 % of goal > \$ 2.8 B total cost avoidance
- New Jun 1999 Executive Order: "Greening the Government Through Efficient Energy Mgmt"
  - Reduce Greenhouse gas emissions 30% by 2010 from 1990 baseline
  - Increase use of Renewable Energy
  - More efficient design & use of "Energy Star" products
  - Expand Private Sector financing & Energy Savings Performance Contracts





## *Funding Strategies – What's working for the Army!*

- Mandated 35% reduction goal - Army estimated it required \$825 M through FY10.
- Utilizing three funding streams:
  - Energy Conservation Investment Program (ECIP) – \$88.2 M
  - Energy Savings Performance Contracts (ESPC) – \$384 M
  - Central Heating Plant Modernization Program – \$300 M

**Total – Funding through 2001 – 772.2 M**

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## *Energy Conservation Investment Program*

- **ECIP provides MILCON funds for energy conservation projects over \$500K.**
- **Goal of ECIP is to improve energy efficiency on military installations while reducing both energy and non-energy costs and improve mission support capability.**
  - **Typical projects: Infrared Heating systems, boiler/chiller upgrades, geothermal heat pumps, distribution system upgrades, lighting upgrades, HVAC controls, EMCS, and photovoltaic power systems**

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## *Energy Conservation Investment Program*

### □ **Army ECIP history of funding:**

➤ 1991 – 3.6M	1997 – 10.5M
➤ 1992 – 9.7M	1998 – 9.6M
➤ 1993 – 5.2M	1999 – 7.4M
➤ 1994 – 7.8M	2000 – 0.0M
➤ 1995 – 11.6M	2001 – 5.2M
➤ 1996 – 10.9M	

**TOTAL – FY1991 – 2001 ---\$81.5M**

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## *Energy Conservation Investment Program*

- FY 03 – 07 ECIP program submissions
- DoD budgeting \$50M /year for FY03-07
- Army share for FY03-07 – Expected to be \$10-12M
- Initial submissions for FY03
  - Approved 1391
  - Economic analysis of project

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## *ECIP Strategies*

**ECIP funds must improve energy efficiency of existing facilities or for constructing new, high efficiency energy systems.**

**ECIP projects do not compete for resources with MCA or OMA**

**Projects are prioritized based on Savings to Investment Ratio (SIR)**

**•Pros -**

- Good for large projects with high \$ savings
- Keep savings generated by the project
- May be a source of funding for renewable or high risk projects

**•Cons -**

- Long lead time to develop and execute projects
- Projects compete Army -wide and funds are limited
- Funding may be delayed or deferred to next fiscal year

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## *Energy Savings Performance Contracting*

- Almost half of the energy funding the Army estimates it needs comes from alternative financing.
- So why are ESPC's popular?
  - Congress tells us to use industry expertise & resources
  - Army installations are not staffed to perform the audits and design the systems needed to save energy and water resources.
  - 41 installations, 80 task orders and \$384 million in contractor investments
  - Contributed 2.7% towards reduction in energy use
  - Private industry can accomplish quicker than Army
  - Contractor must guarantee the proposed savings
  - Shares risk between government and contractor

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## ESPC Programs

- **ESPC Contracting Resources**
  - Army has 18 area-wide contracts covering 50 states, DC and Puerto Rico (awarded 1997, Huntsville CEHNC)
  - Potential capital investment - \$1.1 Billion
  - MEDCOM has awarded ESPCs for use at MEDCOM installations and Medical Facilities
  - DESC awarded \$67 M ESPC at MDW
  - Regional and Technology Specific ESPC thru DOE/FEMP

Use of ESPC & Utility Programs to leverage resources

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## Central Heating Plant Modernization Program

**Upgrade Central Heating Plants & Distribution Systems at major U.S. Army Installations.**

- Modernize 43 plants/ 17 installations.
- Replaced boilers, upgraded plants & distribution systems, modernized equipment, controls, decentralized heating systems.
- Provides long term savings over the 25 year life of the system.
- Reduces environmental emissions; improves efficiency, reliability and safety



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## Distributed Energy Generation

### Photovoltaic

- New Technology
- 32% Efficient
- Double current ratings



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### Wind Power

- Costs are Decreasing
- Purchase "Green Power" where available.
- Be a catalyst for change



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### Fuel Cells

- Central Heating Plants - 11 Sites
- Hospital Utility Plants - 7 Sites
- Pools/Fitness Centers - 3 sites



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## Renewable Technologies

### Photovoltaic Applications



Grid Connected Array



Mobile Power Unit



Communications



Lighting

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## Summary

- A successful, decentralized program that empowers installation energy managers.
  - **Army 27.06% below it's 1985 baseline**
- Expand partnerships - ESPC and UESC - with industry to implement latest technologies and management techniques at Army installations.
- Make some focused Army investments in renewable and new technologies – Yuma PG & Fort Huachuca.
- Invest in people, training and recognition.

Less energy use = reduced emissions

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*Army Energy Website:*

*<http://www.lia.army.mil/energy/index.htm>*

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